RISK DEGREES ASSOCIATED TO THE RESULTANT IMPACTS OF STORM WATER NETWORK FLOODING ON URBAN AREAS

24/05/2016

درجة المخاطر المرتبطة مع الآثار الناتجة عن فيضانات شبكة تصريف مياه الأمطار في المناطق الحضرية

Economic And Social Commission For Western Asia

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1 Introduction

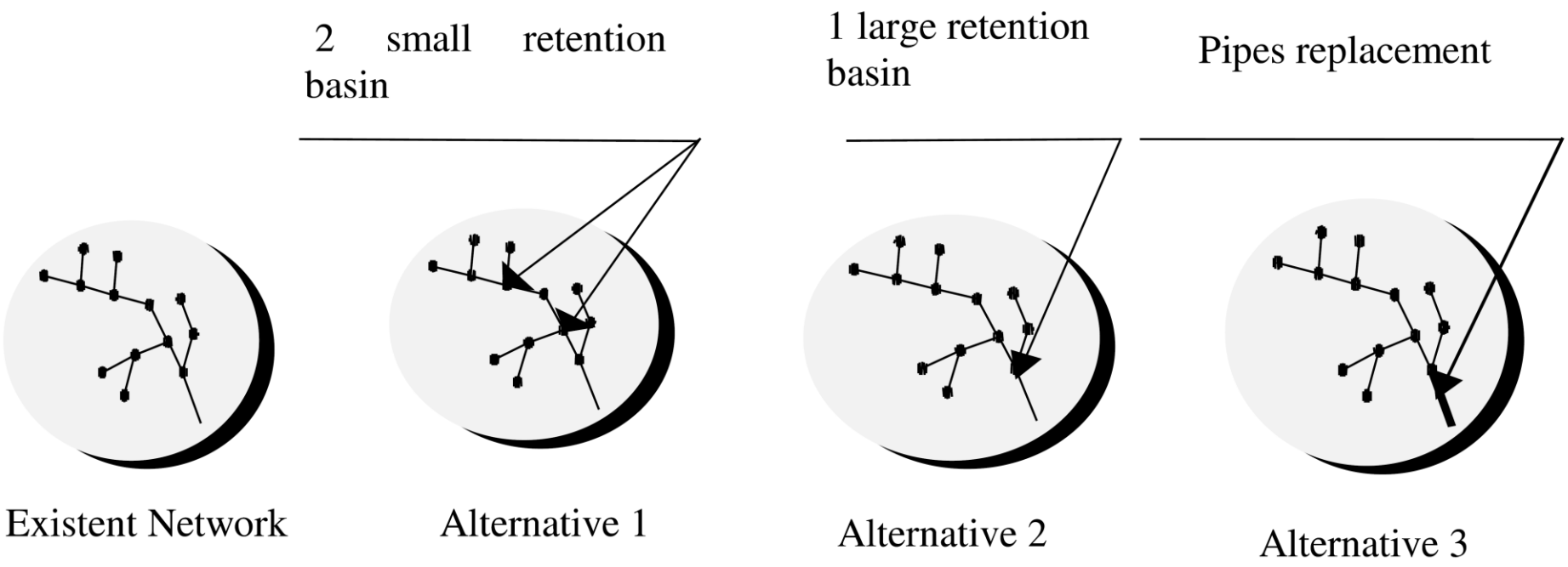
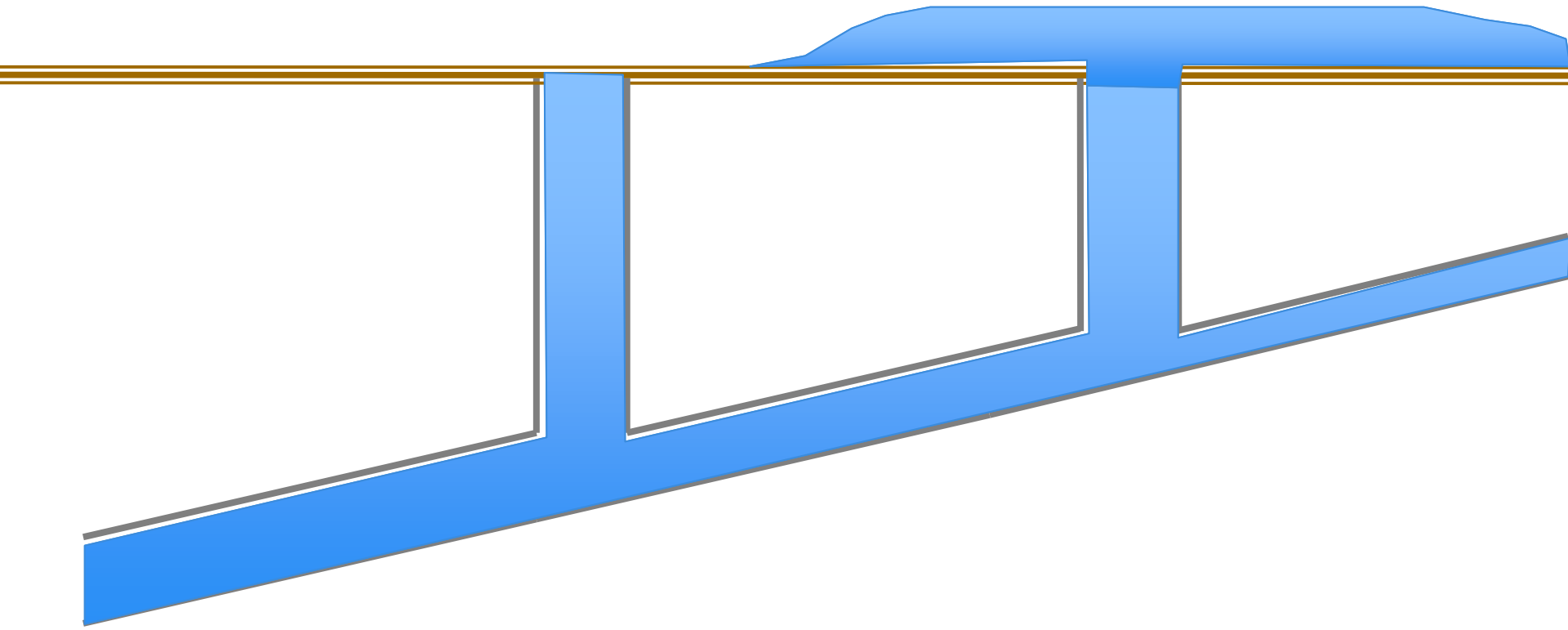


Fig. 1. Example of network upgrading alternatives.

2 Basic information

The Hydraulic simulation

Knowing the operational behavior of the network using hydraulic simulation model



2 Basic information

The Identification of ponding areas

The size of the ponding area depends on the topography and the nature of the soil around the failed pipe.

3 Evaluation of the Risk degrees

Density of population

Density of traffic

Density of residential land use

Density of commercial land use

Density of industrial land use

Density of public utilities

……

Risk degrees = Function of the risk variables

3 Evaluation of the Risk degrees

Expert system

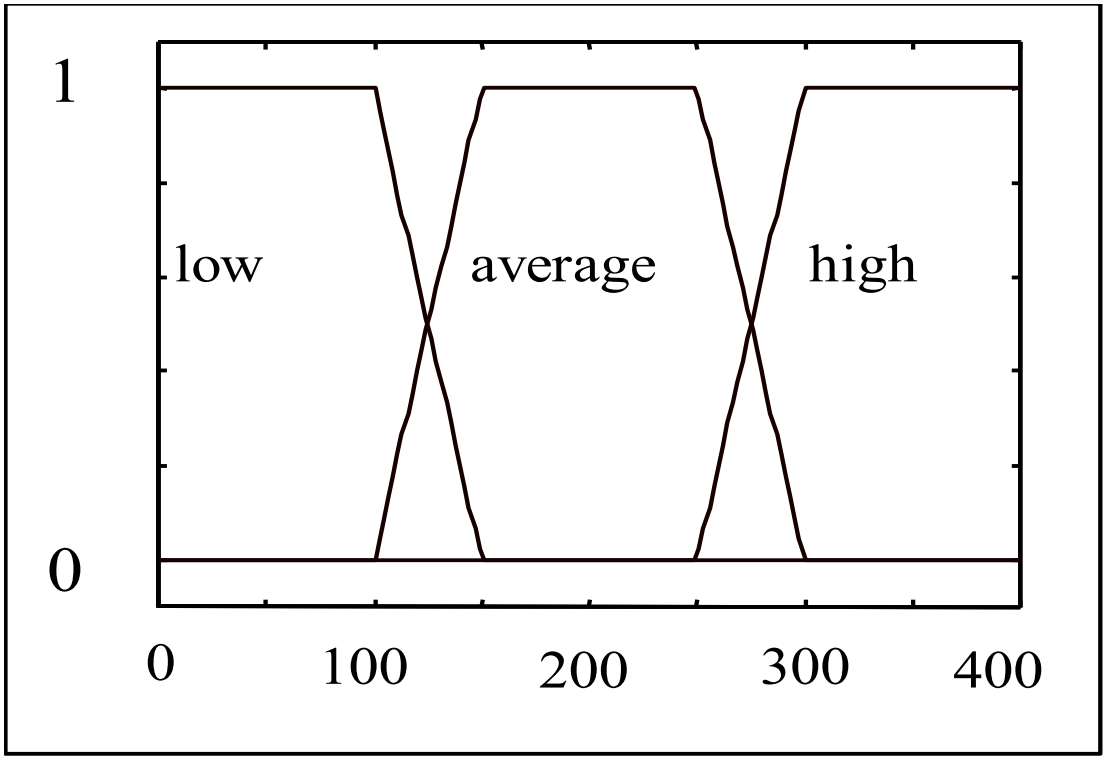
IF Density of population is average

THEN The Risk degree is average

IF	THEN
Density of population is average	The sensitivity degree is average
Density density of commercial land use is high	The sensitivity degree is high
.....	.....

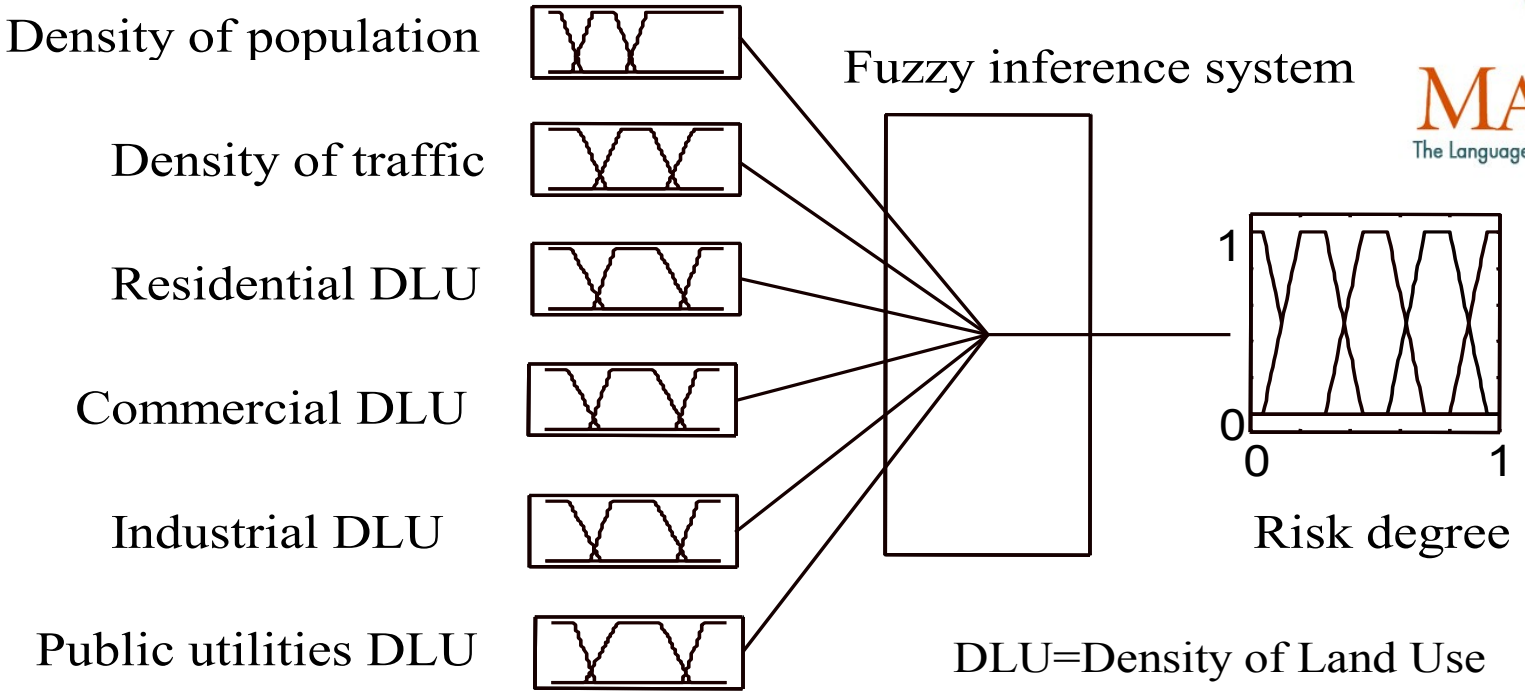
Examples of rules to determine the risk degree

3 Evaluation of the Risk degrees

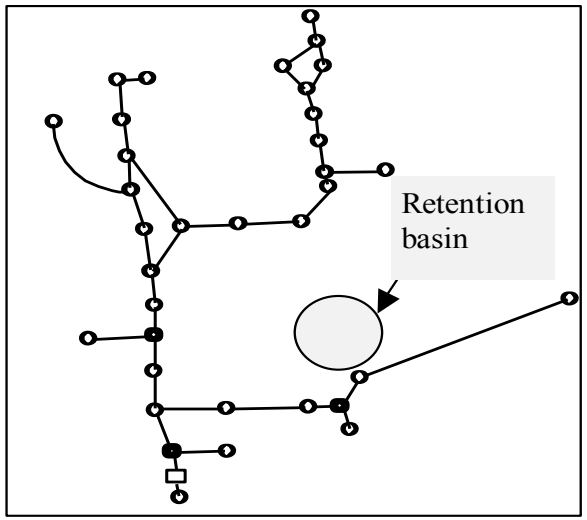


3 Evaluation of the Risk degrees

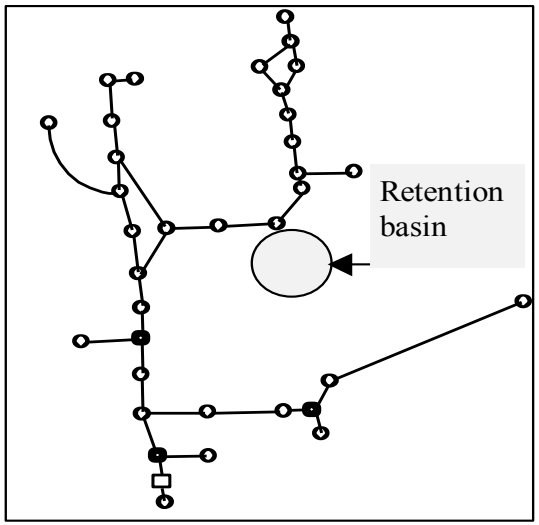
Expert system



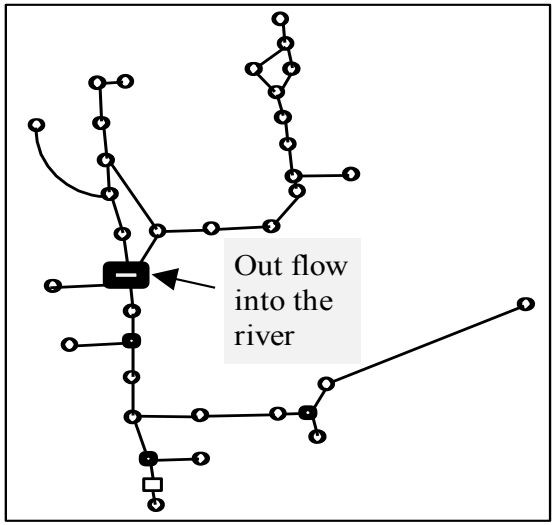
3 Evaluation of the Risk degrees



Alternative A_1



Alternative A_2



Alternative A_3

3 Evaluation of the Risk degrees

Multi-Criteria Decision Making Matrix

	Economic	Technical	Environmental	……	Risk degree
Alternative 1					
Alternative 2					
Alternative 3					

THANK YOU

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